WHAT IS CLAIMED

1. For use with a digitized packet-based transmission network, having a packet buffer into which packets received from said network are buffered and controllably read out for application to a digitized packet signal processor, a method of controlling packet delay through said packet buffer, said method comprising the steps of:

(a) establishing a nominal buffer delay through said packet buffer for packets received from said network, and maintaining said nominal buffer delay in the absence of an increase in delay in receipt of packets from said network;

(b) in response to an increase in delay in receipt of packets from said network, increasing buffer delay to an increased buffer delay value corresponding to said increase in delay, and thereafter maintaining said increased buffer delay value in the absence of a further increase in delay in receipt of packets from said network; and

(c) repeating step (b) as necessary for any further increase in delay in receipt of packets from said network, so as to maintain the value of buffer delay at a value associated with maximum encountered transport delay through said network.

2. A method according to claim 1, in each of steps (b) and (c), in response to said increase in delay in receipt of packets from said network exceeding the maximum available delay through said packet buffer, discarding the oldest packet stored in said packet buffer.

3. A method according to claim 1, in each of steps (b) and (c), in response to said packet buffer becoming depleted of packets, selectively supplying no packet or reapplying the most recently received packet stored therein to said digitized packet signal processor.

4. A method according to claim 1, wherein step (a) includes establishing a minimum number of packets that must be present in said buffer before a packet therein is controllably read out for application to said digitized packet signal processor.

5. A method according to claim 4, wherein step (a) further includes, prior to handling a call, setting to prescribed reset values a buffer size counter whose contents are representative of how may packets are stored in said buffer, and a buffer flag associated with whether said minimum number of frames has been received.

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6.   A method according to claim 5, wherein step (a) further comprises monitoring a communication channel of said network for receipt of an incoming voice packet within a respective packet interval and, in response to detecting an incoming voice packet, controllably modifying the contents of said buffer size counter, and storing said incoming voice packet in said buffer.

7.   A method according to claim 6, wherein step (a) further includes changing said buffer flag from its reset value, in response to said buffer containing said number of packets that must be present before a packet is controllably read out therefrom, and controllably reading out a packet from said buffer for application to said digitized packet signal processor.

8.   A method according to claim 6, wherein step (a) further includes establishing the maximum number of packets that can be stored in said buffer and, in response to an increase in delay in receipt of late arriving packets from said network for application to said buffer being such as to cause the contents of said buffer to exceed said maximum number, discarding the oldest packet stored in said buffer.

1   9.   In a digitized packet-based transmission network

2   having a packet buffer into which packets received from a

3   network channel are controllably buffered and read out for

4   application to a digitized packet signal processor, a

5   buffer delay control mechanism that is resident in a buffer

6   control processor, and is operative to optimize buffer

7   throughput delay to maximum network throughput delay

8   experienced by packets transmitted over said network, said

9   buffer delay control mechanism being operative to establish

10   a nominal buffer delay through said packet buffer for

11   packets received from said network, and maintain said

12   nominal buffer delay in the absence of an increase in delay

13   in receipt of packets from said network and, in response to

14   an increase in delay in receipt of packets from said

15   network, to increase buffer delay to an increased buffer

16   delay value corresponding to said increase in delay, and

17   thereafter maintaining said increased buffer delay value in

18   the absence of a further increase in delay in receipt of

19   packets from said network but, in the event of a further

20   increase in delay in receipt of packets from said network,

21   being operative to further increase buffer delay, so as to

22   maintain the value of buffer delay at a value associated

23   with maximum encountered transport delay through said

24   network.

10. A buffer delay control mechanism according to claim 9, wherein said buffer delay control mechanism is further operative, in response to an increase in delay in receipt of late arriving packets from said network for application to said buffer being such as to cause the contents of said buffer to exceed said maximum number, to discard the oldest packet stored in said buffer.

11. A buffer delay control mechanism according to claim 9, wherein said buffer delay control mechanism is further operative, in response to said packet buffer becoming depleted of packets, to selectively supply either no packet or to reapply the most recently received packet stored therein to said digitized packet signal processor.

12. A buffer delay control mechanism according to claim 9, wherein said buffer delay control mechanism is operative to monitor a communication channel of said network for receipt of an incoming voice packet within a respective packet interval and, in response to detecting an incoming voice packet, to controllably modify a buffer size counter, the contents of which are representative of how may packets are stored in said buffer, and to cause said incoming voice packet to be stored in said buffer.

13. A buffer delay control mechanism according to claim 9, wherein said buffer delay control mechanism is operative, in response to an increase in delay in receipt of late arriving packets from said network for application to said buffer being such as to cause the contents of said buffer to exceed the maximum number of packets that can be stored in said buffer, to discard the oldest packet stored in said buffer.

14. For use with a digitized packet-based transmission network, having a packet buffer into which packets received from said network are buffered and controllably read out for application to a digitized packet signal processor, a method of controlling storage into and read-out of packets from said packet buffer, so as to optimize buffer throughput delay to the maximum network throughput delay experienced by packets transmitted over said network, said method comprising the steps of:

(a) as packets are successively received from said network, storing said packets into said buffer, until a network transmission delay causes an interruption in receipt of packets from said network, thereby establishing a network throughput delay corresponding to the number of packets stored in said buffer at the occurrence of said interruption in receipt of packets from said network;

(b) in response to said interruption in receipt of packets from said network in step (a), sequentially reading out packets stored in said buffer for application to said digitized packet signal processor;

(c) in response to receipt of further packets from said network subsequent to said interruption in step (a), interrupting sequentially reading out of packets from said buffer in step (b), and storing said further packets into said buffer as said further packets are successively received from said network, until a network transmission delay causes an interruption in receipt of said further packets from said network, so as to increase said buffer throughput delay to an increased network transmission delay corresponding to the total number of packets stored in said buffer; and

(d) in response to said interruption in receipt of said further packets from said network in step (c), sequentially reading out packets stored in said buffer for application to said digitized packet signal processor.